STATE OF DELAWARE

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL SITE INVESTIGATION AND RESTORATION BRANCH

FINAL PLAN OF REMEDIAL ACTION



SCANNED 10CT 1 2 2004 File# DE /309 B9

October 2004

One River Place Headquarter Site Wilmington, Delaware

DNREC Project No. DE-1309

INTRODUCTION

The One River Place Headquarters (site) is approximately 2.4 acres in size and is located at One River Place on two City of Wilmington tax parcels (Tax Parcel #26-042.00-027 and Tax Parcel #26-042.00-007). Tax Parcel #26-042.00-027 was created from a portion of the current City of Wilmington (City) Public Works Yard (Tax Parcel # 26-042.00-006) and Tax Parcel #26-042.00-007 which was owned by the former Bell's Supply south of West Street in Wilmington, New Castle County, Delaware (Figure 1 and Figure 2). In order to evaluate the environmental conditions prior to the development of the site, the Riverfront Development Corporation (RDC) and the City entered into the Department of Natural Resources and Environmental Control, Site Investigation and Restoration Branch's (DNREC-SIRB's) Voluntary Cleanup Program (VCP) under the provisions of the Delaware Hazardous Substance Cleanup Act (HSCA), 7 Del. C. Chapter 91. Through a VCP Agreement, RDC and the City agreed to investigate the potential risks posed to public health, welfare and the environment at the site. RDC and the City contracted with BrightFields, Inc. to perform a remedial investigation (RI), interim response actions (IRAs), and a feasibility study (FS) of the site pursuant to HSCA.

The objectives and the accomplishments of this environmental work were as follows:

Document existing environmental conditions at the site. This was accomplished by collecting soil and groundwater samples to investigate the impact that historic uses of the property and the surrounding lands may have had on the property. Existing data collected

- during previous investigations, including soil, sediment, and groundwater samples were used to supplement the data collected.
- > Identify source(s) of contaminants, if present.
- > Prepare a statement of relative risk, based on the RI data, describing the impact of any environmental contaminants present given the potential use of the site.
- Evaluate whether remedial action(s) may be required at the site, and if they are, how they can be integrated with the site redevelopment and construction plan.
- Complete interim response actions as approved by DNREC.

This document is the Department's final plan of remedial action (final plan) which contains the Department's final remedial alternative for the site.

ORGANIZATION AND CONTENTS OF THE FINAL PLAN

DNREC issues this final plan under the provisions of HSCA and the Regulations Governing Hazardous Substance Cleanup (Regulations). The final plan presents DNREC's assessment of the health and environmental risks posed by the site and the selection of remedial action to mitigate these risks.

The purpose of the final plan is to provide specific information about the soil and groundwater contamination and the cleanup alternatives, if necessary, that DNREC has considered. As described in Section 12 of the Delaware Regulations Governing Hazardous Substance Cleanup (Regulations), DNREC provided notice to the public and an opportunity for the public to comment on the proposed plan of remedial action (proposed plan). During the comment period of September 13, 2004 through October 4, 2004, DNREC did not receive any comments on the proposed plan; therefore, the proposed plan has been adopted as the final plan. The final plan designates the selected remedy of the site.

The final plan contains a description of the following site information:

- A summary of the procedures, analytical results, interim response actions and conclusions of the Remedial Investigation,
- A discussion of objectives,
- A summary of the risk assessment results, and
- A plan for the site's future use and maintenance.

SITE DESCRIPTION

The One River Place Headquarters site is located adjacent to the Christina River in Wilmington, Delaware (Figure 1). The property is bordered by West Street to the north, the Wilmington Public Works Yard to the south and west, and Juniper Bank (formerly O'Brien Energy) and the Christina River to the east (Figure 2).

At the time when the RI was initiated, the site consisted of approximately 3.01 acres. As the project moved toward completion, the site boundaries were modified to be comprised of two (2) parcels consisting of approximately 2.4 acres. The two (2) parcels include: 0.88 acres of the former Bell's Supply parcel located at 301 South West Street (Tax Parcel ID# 26-042.00-007)

and 1.56 acres acquired from the City of Wilmington Public Works Yard parcel located at 601 South West Street (new Tax Parcel ID# 26-042.00-027). The two (2) parcels were subdivided from existing parcels and recorded in July 2004. The 0.57 acre parcel (Tax Parcel ID# 26-042.00-028) located adjacent to Juniper Bank was part of the site when the project was initiated, and has been included as part of the site investigations, but is not part of the One River Place Headquarters site for the purposes of this final plan. The parcel locations are shown on Figures 2, 3, and 4.

Based on the data collected during the RI and during geotechnical borings, the stratigraphy of the site can be divided into four basic units (surface to depth) as follows:

- Fill containing slag, brick, wood and sand with minor amounts of trash
- Marsh Deposits (Holocene)
- Columbia Formation (Pleistocene)
- Bedrock

The fill layer is primarily composed of silt and clay with some sand, gravel, and debris such as brick, slag, glass, and wood and minor amounts of waste. The fill ranges in thickness from 7 to 13 feet and overlies the native marsh deposits.

The Holocene-aged marsh deposits are gray, black, or brown stiff clay and silt containing organic vegetation, which are approximately 11 to 21 feet thick, and are underlain by the Pleistocene Columbia Formation.

The top of weathered bedrock was encountered at 42 to 48 feet below ground surface (bgs) at an elevation of 36 to 38 feet below mean sea level (msl). Competent (unweathered) bedrock was encountered at a depth of approximately 79 to 84 feet bgs (an elevation of approximately 73 to 78 feet below msl).

Groundwater was encountered at depths ranging from 4 to 9.5 feet bgs in the borings completed across the site. Seasonal groundwater fluctuation was reported to be between several inches and two feet on the adjacent (upgradient) Berger Brothers property (DE-0131), depending on rainfall (Tetra Tech, 2003).

Groundwater beneath the site is expected to flow from northwest to southeast toward the Christina River. Calculations of the horizontal gradient for the site (based on measurements collected on February 7 and March 23, 2004) showed that the gradient was fairly consistent and ranged from 0.093 to 0.011 ft/ft across the site.

The site is relatively flat and is situated on a bend of the Christina River. Preconstruction ground surface elevations ranged from approximately 10 ft to 15 ft above msl. Final site grades will be provided after construction completion. Surface water drainage discharges through two (2) routes as follows: it is either routed through stormwater catch basins and conveyances to a combined sewer outfall (CSO) located on the adjacent Public Works Yard, and then to the Christina River, or it is captured by the bioswale and slowly infiltrates and discharges to the Christina River.

The nearest designated New Castle County Water Resource Protection Area (WRPA), including wellheads or groundwater protection areas, is greater than three (3) miles from the site. The nearest surface water supply intake is greater than two (2) miles from the site and the site is not within a Critical Water Resource Area. The site is located within the Wilmington Groundwater Management Zone (GMZ), which was established by DNREC in August 2001 to prevent the installation of water supply wells in this area.

SITE HISTORY

The site is located in an area of Wilmington that has been in continuous industrial use since the late 1700s. Detailed historical information on the area can be found in the following reports:

- Final Remedial Investigation Work Plan Wilmington Public Works Yard, Wilmington, Delaware (WIK, February 2001)
- O'Brien Property Brownfield Preliminary Assessment II Wilmington, Delaware (DNREC, September 1998)

The following investigation reports and information were reviewed, and detailed summaries of the investigations are included in the March 2004 Riverfront Headquarters Property Remedial Investigation report:

- ➤ Wilmington Public Works Yard DNREC BPA II DNREC, 1997
- ➤ O'Brien Property BPA II DNREC, 1998
- ➤ West Street Connector Transportation Improvements WIK, 1998/99, including the West Street Connector RI, WIK 1998, the Bell's Supply Interim Technical Report (WIK, 1998) and the Additional DNREC Sampling Report (WIK, 1999)
- ➤ Christina River Pedestrian Walkway (Phases III & IV) RI/FS EA, 1999
- ➤ Wilmington Public Works Yard Remedial Investigation WIK, 2001
- ➤ Berger Brothers/Gates Engineering Background Information and the Berger Brothers/Gates Engineering Revised RI/FS/RAWP Tetra Tech, 2003

The following additional reports were used in the preparation of the final plan:

- Riverfront Headquarters Property Focused Feasibility Study- Brightfields, 2004
- ➤ Wilmington Public Works Yard OU-1 [Summary Report for PCB Characterization in the Vicinity of RHQ-1- Brightfields, 2004]
- > Contaminated Material and Water Management Work Plan
- Supplemental Risk Calculation (Deborah Heffernan, dated September 8, 2004, using the EPA April 2004 Risk-based Concentration (RBC) Table)

REMEDIAL INVESTIGATION RESULTS

The following summary of findings was prepared based on the data collected during the RI and during previous investigations at the site:

General

The site comprises an area of approximately 2.4 acres located along the Christina River in Wilmington, Delaware and prior to the initiation of interim actions was a parking lot and a portion of the City of Wilmington Public Works Yard. The proposed future site use is a six-story commercial office building, with parking lots and landscaped areas.

Soil

Boring, test pit, and well drilling logs indicate that portions of the site are filled with industrial fill (up to 13 feet thick) and underlain by marsh deposits.

Twenty-two (22) soil samples were analyzed at Lancaster Laboratories for confirmatory analysis for Target Compound List volatile organic compounds (TCL VOCs), TCL semivolatile organic compounds (TCL SVOCs), TCL pesticides/poly-chlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals and cyanide. Data from eight (8) existing samples was also used to evaluate site contaminants of concern. The results are summarized in Tables 1 through 4.

Aluminum, arsenic, antimony, iron, lead, manganese, nickel, vanadium, PCBs, pesticides, and polynuclear aromatic hydrocarbons (PAHs) were detected in site soil above the Delaware Uniform Risk-Based Remediation Standards (URS) values for unrestricted use and are potential contaminants of concern based on these exceedances.

Arsenic, iron, lead, benzo(a)pyrene, and PCBs were detected in site soil above the restricted use (commercial) URS and were considered potential site contaminants of concern for the risk calculations. The cumulative risk calculations indicate that exposure to the site soil poses an unacceptable carcinogenic and non-carcinogenic risk under the unrestricted use scenario, but not under a restricted use scenario.

An area with elevated subsurface soil lead concentration was identified on the eastern portion of the site at a minimum of approximately 3 feet below pre-construction ground surface. Figure 3 shows the areas of elevated lead concentrations. Surface soil lead concentrations ranged from 21 to 250 mg/kg, which is below both unrestricted (residential) and restricted (commercial) use standards.

Groundwater

Four (4) new monitoring wells were installed and four (4) groundwater samples were collected and analyzed for TCL VOCs, TCL SVOCs, TCL pesticides/PCBs, and TAL metals and cyanide.

Based on groundwater elevations measured in the wells, the groundwater flow direction is toward the southeast (toward the Christina River).

Iron, barium, manganese, and PCB Aroclor-1260 were detected in site groundwater above the URS groundwater value. The HSCA URS for iron and manganese in groundwater are based on the EPA Secondary Drinking Water Regulations (SDWRs) which are aesthetic criteria rather than risk-based concentrations. In addition, the iron and manganese results were in the background range. Therefore, iron and manganese were not considered potential contaminants of concern. As a result, for the purpose of assessing risk to human health, only barium and PCB

Aroclor-1260 were determined to be potential site contaminants of concern in the groundwater. The groundwater results are summarized in Tables 5 and 6.

Routinely ingesting groundwater from the site poses an unacceptable carcinogenic and non-carcinogenic risk. However, the property is located in the pre-existing City of Wilmington GMZ, dated August 2001, where the use of groundwater is controlled by DNREC. No new public or domestic water supply wells are allowed or permitted in the area and all existing water supply wells are located further than two (2) miles from the site. However, no complete pathway for groundwater ingestion exists, nor will it exist. Therefore, the site groundwater does not pose a risk to human health under current and restricted (i.e., commercial) future use scenarios.

The mass loading calculations were performed based on the February 2004 groundwater results. The mass loading calculations indicated that PCBs in site groundwater may be a potential source of PCB contamination to the Christina River. However, the PCB detection used in the mass loading calculation was from RHQ-1 and the monitoring well between RHQ-1 and the Christina River reported non-detect for PCBs. Further, any potential PCB exceedence is likely related to offsite contamination. Therefore, because transformers were previously staged at the Public Works Yard, the PCB contamination in soil and groundwater will be addressed in Operable Unit 1 of the Public Works Yard through a separate pre-existing Voluntary Cleanup Program agreement.

During the February 2004 RI sampling investigation, PCBs were detected in one monitoring well, RHQ-1. The detection was above the URS groundwater value for PCBs. BrightFields conducted a supplemental PCB investigation in August 2004, including resampling the groundwater at monitoring well RHQ-1 and collecting both a filtered and an unfiltered sample. The unfiltered PCB sample reported 0.94 ug/L (which is one order of magnitude below the original detection), and the filtered sample reported non-detect. As stated above, any potential PCB exceedence is likely related to offsite contamination. Therefore, because transformers were previously staged at the Public Works Yard, the PCB contamination in soil and groundwater will be addressed in Operable Unit 1 of the Public Works Yard through a separate pre-existing Voluntary Cleanup Program agreement.

Sediment

The site boundary is located a minimum of one hundred (100) feet west of the Christina River bank and west of the Christina River Pedestrian Walkway property (Riverwalk). During previously completed HSCA investigations, twenty-one (21) sediment samples were collected from the bank of the Christina River and six (6) river sediment samples were collected from the edge of the river below the waterline. The previous results indicate that the sediment has been sufficiently characterized during previous investigations. The area was impacted by metals and PAHs. The remedial action remedy for the Riverwalk Site (DE-1139) included sediment removal, slope stabilization, and construction of the Riverwalk. These activities were performed between the site and the Christina River in accordance with the DNREC Final Plan of Remedial Action for the Christina River Pedestrian Walkway (August 1999). This remedial action adequately dealt with any contribution to contaminants in sediments from the site.

The One River Place Headquarters site has a DNREC-approved Erosion and Sediment Control Plan (E&S Plan). As part of the E&S Plan, concrete barriers were placed around the AAA site. The barriers were wrapped in plastic, and weighted with gravel at the base of the barriers to prevent any surface water run-off from the One River Place Headquarters site to the Christina River. All stormwater was contained on-site or filtered through an on-site sedimentation tank with filters prior to being discharged into the sanitary sewer in accordance with City of Wilmington permit requirements.

INTERIM RESPONSE ACTIONS

The Interim Response Actions (IRA) at the site were initiated in order to properly manage, handle and dispose of soil and groundwater and other materials generated at the site and encountered during construction. These IRAs were performed at the site prior to issuance of the proposed plan and will continue until construction completion.

Interim Response Actions occurred during the following construction activities: rerouting two (2) large existing storm water lines, installing underground utilities, pre-auguring for foundation piles, and excavations for pile caps, grade beams, and an elevator shaft. IRA will continue to occur throughout construction as needed for construction completion. IRA completed after the August 2004 Interim Response Action Status Report will be summarized in the HSCA Construction Completion Report for this project, which will be prepared after substantial construction completion.

The following DNREC-approved remedial IRA was performed at the site with DNREC oversight and in accordance with the DNREC-approved Contaminated Material and Water Management Work Plan (CMWMWP) and Health and Safety Plan (HASP):

Dewatering

When groundwater was pumped from excavations, it was pumped to a settlement tank, and then filtered to remove sediment prior to discharge into the City's sanitary sewer system under a temporary discharge permit granted by the City of Wilmington. Flow metering and discharge sampling were performed as required by the City. Analytical results of the discharge samples met the City's permit requirements. Approximately 712,000 gallons of groundwater were pumped from the site, filtered, and discharged to the sanitary sewer system.

Disposal of Site Dewatering Sediment

The sediment collected during dewatering was removed from the settlement tank, managed and properly disposed off-site along with the lead-hazardous soil (see below). The sediment was properly disposed of by Casie Ecology Oil Salvage, Inc. in Vineland, New Jersey.

Disposal of Lead-hazardous Soil

Subsurface soil excavated for construction purposes that was determined to be hazardous waste based on lead results concentration using the Toxicity Characteristic Leaching Procedure (TCLP) analysis was removed and properly disposed offsite per federal and state regulations. Approximately 1,800 tons of lead-hazardous soil were removed and properly disposed during this IRA. The soil was properly disposed of by Casie Ecology Oil Salvage, Inc. in Vineland, New Jersey.

Disposal of Non-hazardous Soil

Excavated soil that was non-hazardous, and that could not be reused on site for structural reasons, was removed and properly disposed, per federal and state regulations. Approximately 2,600 tons of non-hazardous soil was removed as part of this IRA. The soil was properly disposed at the Soil Safe, Inc. facility in Bridgeport, New Jersey.

Re-use of Non-hazardous Soil

Excavated soil that was non-hazardous and could be reused on site was reused. Approximately 150 to 300 tons of soil was re-used as on site fill.

Disposal of Lead-hazardous Wood

Excavated wood that was hazardous for lead per TCLP analysis was removed, cut into three (3) foot sections, loaded into a roll-off, and properly disposed of in accordance with federal and state regulations. Approximately seven (7) tons of lead-hazardous wood were removed as part of this interim action. The wood was properly disposed at Envirosafe Services of Ohio Inc. in Oregon, Ohio.

Disposal of Non-hazardous Wood

Excavated wood that was non-hazardous was removed, cut into three (3) foot sections, loaded into a roll-off, and properly disposed. Approximately 16.5 tons of non-hazardous wood was removed during this IRA. The wood was properly disposed at Modern Landfill in York, Pennsylvania.

Marker Fabric

Orange marker fabric was placed along the sidewalls and floors of the utility trenches to delineate the clean fill from the historic industrial fill. As noted above, subsurface soil on the eastern side of the site is hazardous for lead. Tested and DNREC-approved clean fill was used as backfill in the utility trenches. Therefore, as the trenches now contain clean fill, DNREC will not have to be contacted for utility upgrade or repair unless the work is conducted outside the clean fill areas.

Erosion and Sediment Controls

In addition to standard sediment and erosion control measures, DNREC-required concrete barriers were installed around the site perimeter to prevent offsite sediment migration.

REMEDIAL ACTION OBJECTIVES

The Regulations provide that DNREC set objectives for land use, resource use, and cleanup levels that are protective of human health and the environment. The following qualitative objectives are determined to be appropriate for the site:

- Control potential human exposure (dermal, inhalation and ingestion) to contaminated soil.
- Control potential contaminated soil erosion and subsequent overland transport of contaminated surface water to the Christina River.

➤ Properly reuse or dispose of all excavated soil and groundwater generated during construction, in accordance with local, state, and federal regulations.

These objectives are consistent with the planned development of the site and the surrounding land and development plans for the City of Wilmington, zoning policies, state regulations governing water supply, and worker health and safety.

Based on the above qualitative remedial action objectives, the following quantitative remedial action objectives (RAO) based on restricted use were developed:

- Prevent human exposure to soil or other media having a cumulative risk factor greater than 1 x 10-5 and/or a hazard index of 1, or as based on DNREC URS tables. This includes but is not limited to the following:
 - 1. Prevent human exposure to soil having a lead concentration greater than the URS for lead of 1,000 milligrams per kilogram (mg/kg).
 - 2. Prevent human exposure to soil having an arsenic concentration greater than 19 mg/kg, per the EPA RBC for arsenic (April 2004).
 - 3. Prevent human exposure to soil having a benzo(a)pyrene concentration greater than 0.8 mg/kg, the site-specific risk-based concentration.
 - 4. Prevent human exposure to soil having a PCB concentration greater than 25 mg/kg developed, per the Toxic Substances Control Act (TSCA) low occupancy area risk-based cleanup levels.
- ➤ Dispose offsite at a licensed Resource Conservation and Recovery Act (RCRA) hazardous waste disposal facility all excavated soil generated during construction with lead Toxicity Characteristic Leaching Procedure (TCLP) results above 5.0 milligrams per liter (mg/L).
- Manage and mitigate environmental risks, as they occur during the building construction and redevelopment process, in accordance with the DNREC-approved, site-specific CMWMWP and the site-specific Health and Safety Plan (HASP). This will include, but is not limited to, removal of underground storage tanks (USTs) and petroleum-impacted soil, if discovered, in accordance with DNREC's Tank Management Branch (TMB) regulations.

RISK EVALUATION SUMMARY

A risk assessment to evaluate the possible effects on human health from the use of the site consistent with the objectives discussed above was performed using appropriate risk assessment methods.

The carcinogenic cumulative risk posed by site soil to a commercial worker would be 9.0 x 10⁻⁶ (9.0 in 1,000,000), which are within DNREC acceptable risk guidelines. The individual compounds that most significantly contribute to the carcinogenic risk are arsenic and benzo(a)pyrene. The non-carcinogenic cumulative risk would result in a Hazard Quotient of 0.04, which is within DNREC's acceptable risk guidelines.

Under a construction worker scenario, the carcinogenic risk posed by site soil was calculated to be 1.4×10^{-6} and the non-carcinogenic hazard index was calculated to be 0.14 which again are within acceptable risk guidelines.

Because the US EPA has not published a consensus chronic reference dose (RfD) or cancer slope factor (CSF) for inorganic lead, it is not possible to calculate risk-based concentrations for this metal and, therefore, it is not included in the DNREC Risk Calculator. The US EPA Office of Solid Waste directive recommends that soil levels less than 1,000 mg/kg (which is the same concentration used by DNREC for the restricted use criteria) are generally safe for commercial use. The mean lead concentration across the site is 508 mg/kg, which is below the restricted use evaluation criteria. However, disposal characterization samples from the geotechnical borings contained up to 14.1 mg/L in TCLP lead analysis, indicating that leaching is possible under low pH conditions. Nevertheless, based on the groundwater data at the site, lead is not leaching under field conditions of pH 7 to 8. The distribution of lead at the site is presented in Figure 3.

Because the elevated lead concentrations were predominantly located in the subsurface samples from the eastern portion of the property, separate calculations were performed to evaluate the lead distribution. The 95% Upper Confidence Limit (UCL) of the mean for the subsurface samples on the eastern portion of the property is 2,596 mg/kg, which is above both unrestricted and restricted use criteria, poses a risk if direct contact occurs. However, this soil is below the ground surface and will not be accessible by direct contact. The building footprint and/or parking areas will cover this area, as well as the majority of the site. The 95% UCL of the mean for the surface and surface samples collected from the remainder of the property is 359 mg/kg, which is below both unrestricted and restricted use criteria.

The lead-impacted subsurface soil is located along the eastern edge of the site. This subsurface soil was located at a minimum depth of three (3) feet below the top of ground across the eastern portion of the site prior to construction. The site will be filled for construction purposes. At the completion of construction, all areas of lead-impacted soil above commercial levels will be covered with a minimum of two (2) feet of clean fill. As such, there is no direct exposure pathway to the soil. Based on the risk assessment results and DNREC's requirements for protection of human health and the environment, the site does not require either the removal of the lead-impacted soil or the placement of an impervious cap. However, after construction completion, the surface of the soil will be covered with imported fill, the building, parking lots, hardscaping, and/or landscaping.

The cumulative risk assessment performed for site groundwater shows that consumption of groundwater from beneath the site would pose an unacceptable carcinogenic and non-carcinogenic risk. However, the site is included in the existing City of Wilmington Groundwater Management Zone as well as regulated by City of Wilmington municipal law all of which prevent potable consumption of groundwater within the City limits.

The risk to the environment resulting from groundwater discharge to surface water was also evaluated. Based on modeling of the chemicals of concern in groundwater, total PCBs are below the URS and the fresh water chronic criteria, but exceed the fish ingestion criteria. All other parameters detected in site groundwater, are more than one order of magnitude lower than the most conservative surface water quality criteria by the time they reach the Christina River.

FINAL PLAN OF REMEDIAL ACTION

Based on the results of previous investigations, including the RI, the FFS, the IRA at the site and the RAOs, DNREC the following are the final remedial actions for the site:

- 1. As described in Alternative 3 in the FFS, the remedy for soil contaminated with lead consists of the proper management and offsite disposal of excavated, lead-contaminated soil with TCLP analysis results above 5 mg/l. This will be performed each time soil is excavated during the building construction and utility installation process. All work has been and will continue to be performed under the CMWMWP and the HASP. To date, several interim action soil removal actions have been performed on the site and will continue to be performed through the remaining construction phases of the project. The remaining construction activities include but are not limited to installing the building slab and additional utilities work as necessary to support the operation of the building, as shown on the Site Development Plan (Figure 4).
- 2. Following construction completion, any intrusive activities (including excavating, etc.) in the soil below two (2) feet in depth in the lead-impacted areas of the site will be restricted by the placement of a deed restriction noting that no intrusive activities will be allowed without prior approval of DNREC.
- 3. The DNREC-approved O&M Plan will be finalized within 90 days following construction completion. The O&M Plan will provide procedures for evaluating the integrity of the site stabilization following construction. In addition, the O&M Plan will include a Groundwater Quality Management Plan for the site which will include provisions for continued groundwater monitoring and evaluation.
- 4. The groundwater will be restricted by the owner by the placement of a deed restriction noting that groundwater shall not be used as a potable water supply and the site is located within a City of Wilmington GMZ (dated August 2001) to prevent future use of the groundwater beneath the site without prior approval of DNREC. In addition, the City prohibits drinking water wells to be installed within the City limits as follows:
 - "The use, maintenance, possession, and construction of a private well within the boundaries of the city without the approval of the commissioner, who may in his discretion grant such approval, is prohibited. Every person violating this section shall be guilty of a misdemeanor and shall be punished by a fine of \$100.00."
- 5. While not anticipated based on historical uses of the site, any petroleum contaminated materials or underground storage tanks (USTs) that are encountered during construction at the site will be addressed by DNREC's Tank Management Branch (TMB) according to the applicable TMB regulations.

6. The site use will be restricted to commercial use by the owner by the placement of a deed restriction. Any future development of the parcels will be limited to commercial development.

PUBLIC PARTICIPATION

The Department actively solicited written public comments and suggestions on the proposed plan of remedial action. The comment period began on September 13, 2004 and ended on October 4, 2004. No comments were received. If you have any questions or concerns regarding the One River Place Headquarters site, or if you would like to view reports or other information regarding the site, please contact the project manager, Jane Biggs Sanger or Rick Galloway, at 391 Lukens Drive, New Castle, Delaware 19720, or at 302-395-2600.

DECLARATION

The final plan of remedial action for the One River Place Headquarters site is protective of human health, welfare and the environment, and is consistent with the requirements of the Delaware Hazardous Substance Cleanup Act.

John Blevins, Director

Division of Air and Waste Management

Date of Review of Final Plan

JFBS/RMG/smg JFB04043/RMG04046 DE 1309 II B9

SIRB/AAA Final Plan/10.01.04/JFBS/RMG.sg

Figure 1 - Site Location



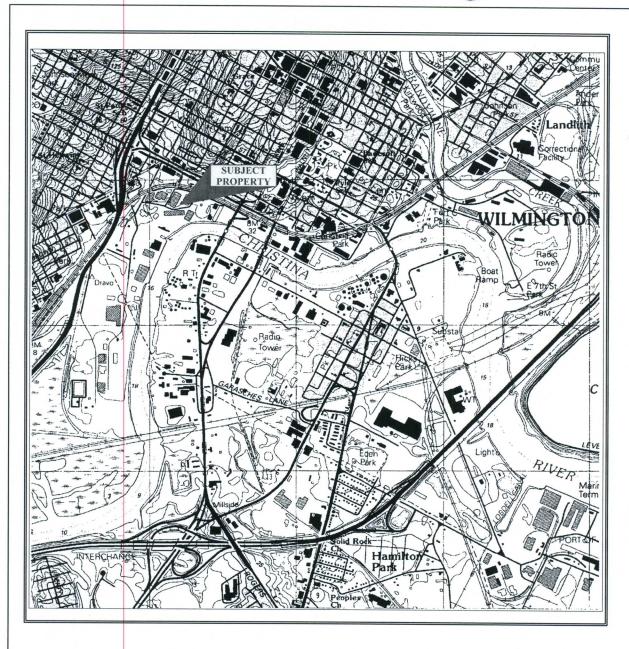


FIGURE 1 Site Location/Topographic Map From USGS Wilmington South Quadrangle

Wilmington Del. - N.J. 7.5 minute series, 1993

Riverfront Headquarters Project Wilmington, Delaware

File No. 0992 14.21

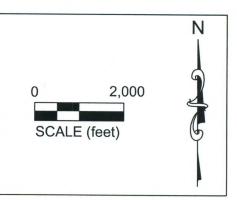


Figure 2 - Site Layout

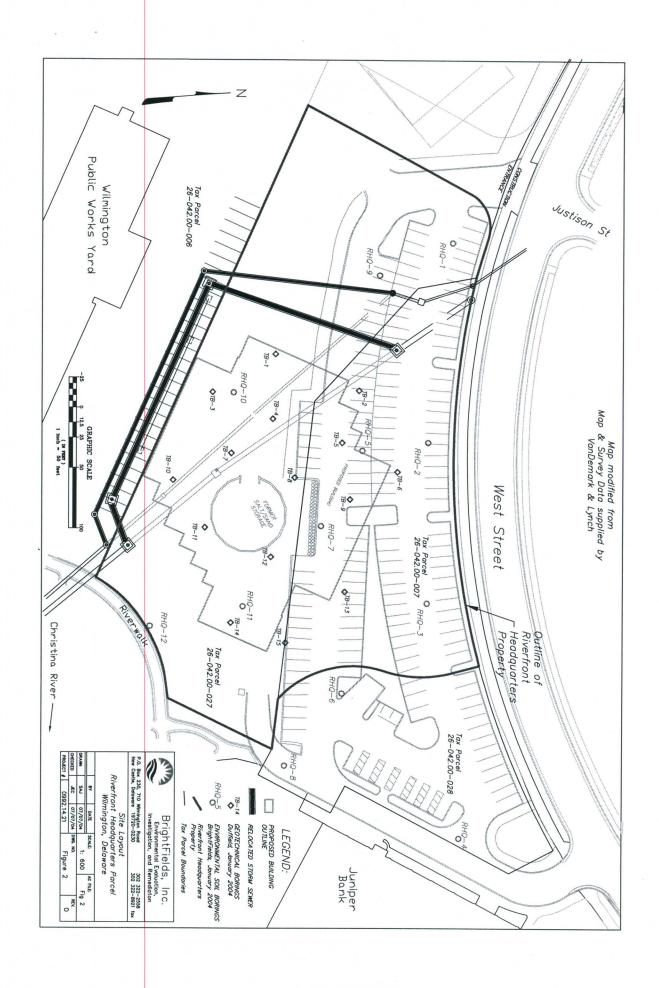


Figure 3 - Subsurface Lead Above 1,000 mg/kg

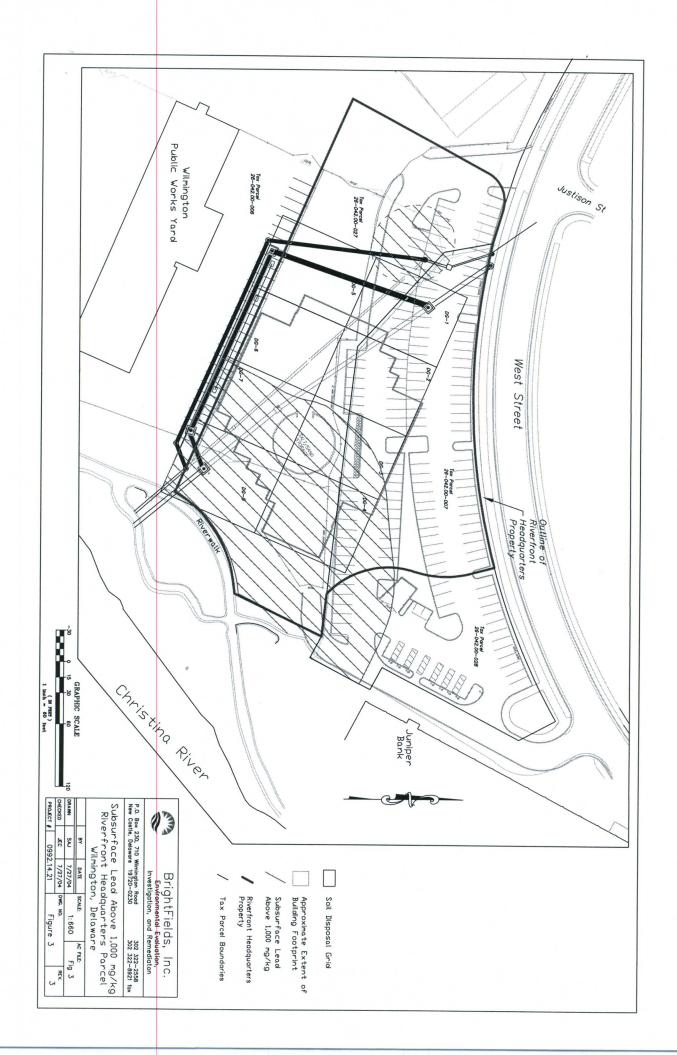


Figure 4 - Site Redevelopment Plan

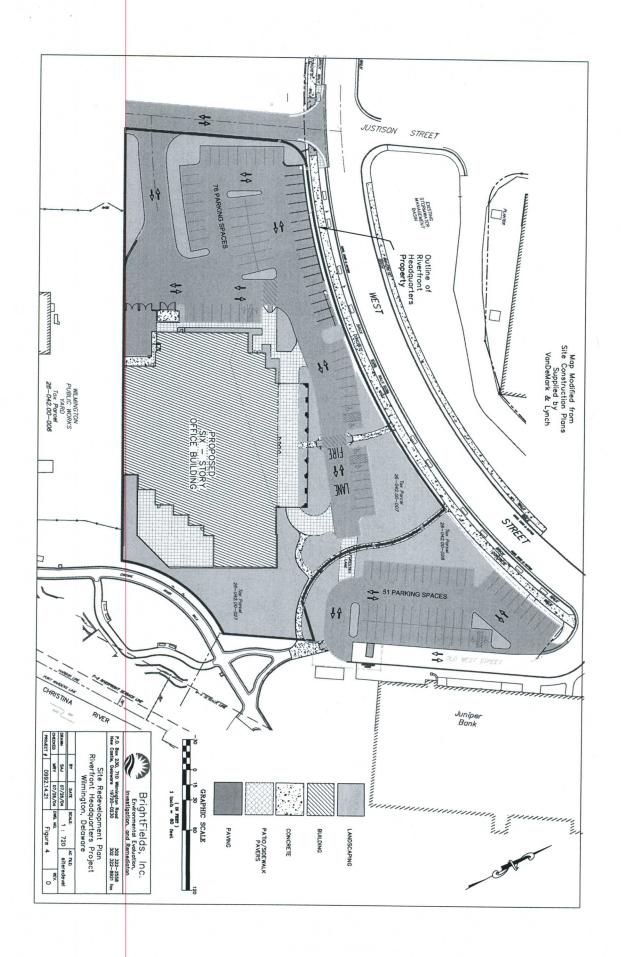


TABLE 1 Non-HSCA Soil Analytical Results - Existing Data Riverfront Headquarters RI

		Ri	verfront H	eadquarte	rs KI			
Sample ID		S Non-Critical	T5-4'	T5-9'	WY-GP8-S00	WY-GP8-S00	WY-GP9-S00	WY-GP9-S0
Sample Date/Investig Sample Depth	Water Resour	ce Area (12/99)	11/12/94 EA Christina River Pedestrian Walkway 4'	11/12/94 EA Christina River Pedestrian Walkway 9'	02/26/01 WIK Public Works Yard RI 0-2.0		02/26/01 WIK Public Works Yard RI 0-2.0	02/26/01 WIK Public Works Yard RI 5.0-5.7
Laboratory	Jnrestricted Us	Restricted Use	IAL	IAL	STL	STL	STL	STL
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TAL Metals								
Aluminum	7,800	200,000	8,120	24,000	NA	NA	NA	NA
Antimony	3	82	2.46 U	3.31 U	NA	NA	NA	NA
Arsenic	11 ^t	11 ^t	11.7	7.5	1.1	8.7	1.0	0.83 U
Barium	550	14,000	152	148	48.8	176	57.5	12 B
Berylium	16	410	0.434	1.21	NA	NA	NA	NA
Cadmium	4	100	0.459	0.331 U	0.085 U	0.5 B	0.11 B	0.093 U
Chromium	nca	nca	4,620	2,830	NA .	NA 20.5	NA 0.5	NA
Chromium	12,000	310,000	29.5	47.2	15.5	20.5	9.5	6
Cobalt Copper	470 310	12,000 8,200	5.34 55.6	17.0 37.2	NA NA	NA NA	NA NA	NA
Iron	2,300	61,000	28,400	35,800	NA NA	NA NA	NA NA	NA
Lead	400	1,000	658	121	20.1	1,100	16.1	NA 4.7
Magnesium	nca	nca	1,720	5,900	NA NA	NA NA	NA	NA NA
Manganese	160	4,100	139	1,350	NA	NA	NA	NA
Mercury	10	610	1.36	0.304	0.018 U	0.67	1.1	0.017 U
Nickel	160	4,100	13.2	33.1	NA	NA NA	NA	NA NA
Potassium	nca	nca	1,520	2,380	NA	NA	NA	NA
Selenium	39	1,000	2.46 U	3.31 U	0.96 U	1.0 U	0.88 U	1.0 U
Silver	39	1,000	0.608 U	0.824 U	0.23 U	0.26 U	0.21 U	0.25 U
Sodium	nca	nca	217	426	NA	NA	NA	NA
Thallium	18	220	0.0983 U	0.132 U	NA	NA	NA	NA
Vanadium	55	1,400	25.0	45.6	NA	NA	NA	NA
Zinc	2,300	61,000	344	121	NA	NA	NA	NA
Wet Chemistry								
Cyanide	160	4,100	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
VOCs								
xylenes	420	5,000	0.908	0.723 U	0.610 U	0.600 U	0.550 U	0.710 U
cis-1,2-Dichloroethene		2,000			0.61 U	0.062 J	0.55 U	0.71 U
All other VOCs were n	ot detected							
Pesticides/PCBs								
Aroclor-1248	0.3	3	0.346 U	0.456 U	0.071 U	0.078 U	4.2	0.078 U
Aroclor-1254	0.3	3	0.346 U	0.456 U	0.071 U	0.078 U	6.0	0.078 U
All other Pesticides/PC	Bs were not dete	ected						
SVOCs								
fluorene	310	5,000		(A) (2 (5) (5)	0.017 J	0.066 J	0.0082 J	0.39 J
Phenanthrene	1,000	5,000	0.272	0.158 U	0.17 J	0.39	0.084 J	7.7
anthracene	1,000	5,000			0.041 J	0.078 J	0.028 J	0.69 J
fluoranthene	310	5,000	0.354	0.158 U	0.25 J	0.33 J	0.14 J	11
pyrene	230	5,000	0.407	0.158 U	0.35 J	0.53	0.16 J	9.6
benzo(a)anthracene	0.9	8	0.240	0.158 U	0.11	0.15	0.070	3.1
chrysene bis(2-ethylhexyl)phtha	87	780	0.234	0.158 U 0.158 U	0.13 J	0.26 J	0.11 J	5.0
benzo(b)fluoranthene	46 0.9	410 8	0.120 U 0.247		0.22	0.21	0.036 U	15
benzo(k)fluoranthene	9	78	0.247 0.0886 J	0.158 U 0.158 U	0.22	0.31	0.036 U	4.5
benzo(a)pyrene	0.09	0.8	0.0886 J	0.158 U	0.081	0.10	0.036	1.7 3.5
Indeno(1,2,3-cd)pyrene	0.09	8	0.212 0.0863 J	0.138 U	0.062	0.039 U	0.076	2.1
dibenz(ah)anthracene	0.09	0.8	0.0003 3	0.136 0	0.002 0.035 U	0.039 U	0.076 0.023 J	0.52
benzo(ghi)perylene	nca	nca	0.115 J	0.158 U	0.050 J	0.39 U	0.023 J	2.0
Naphthalene	160	4,100		5.150	0.014 J	0.098 J	0.037 J	0.074 J
Acenaphthylene	nca	nca			0.030 J	0.056 J	0.050 J	0.42 J
Acenaphthene	470	5,000	BECKEN BY	100000000000000000000000000000000000000	0.013 J	0.055 J	0.36 U	0.28 J
All other SVOCs were	not detected							

t- Delaware background concentration (DNREC, 2002)

Empty gray shaded cells - no results reported

Bold - Compound exceeds unrestricted use URS

Shaded - Compound exceeds restricted use URS

nca - no criteria available

NA - Not Analyzed

U - Compound was not detected at the indicated method detection limit

J - Estimated concentration

HSCA Soil Analytical Results - Inorganics Riverfront Headquarters RI Table 2

Total Cyanide	Wet Chemsitry	Zinc	Vanadium	Thallium	Sodium	Silver	Selenium	Potassium	Nickel	Mercury	Manganese	Magnesium	Lead	Iron	Copper	Cobalt	Chromium	Calcium	Cadmium	Beryllium	Barium	Arsenic	Antimony	Aluminum	TAL INORGANICS	,	Units	Sample Depth	Sample Date	Sample ID
160		2,300	55	18	nca	39	39	nca	160	10	160	nca	400	2,300	310	470	12,000	nca	4	16	550	11 ^t	3	7,800	3	Unrestricted Use				DNREC URS for Resource
4,100		61,000	1,400	220	nca	1,000	1,000	nca	4,100	610	4,100	nca	1,000	61,000	8,200	12,000	310,000	nca	100	410	14,000	11 ^t	82	200,000		Restricted Use				DNREC URS for Non Critical Water Resource Area (12/99)
2.8		86.3	32.2	1.50 B	308	0.191 J	1.12 U	1,310 J	89.5	0.474	224	33,100	74.2	15,100	25.2	7.83	28.6	77,300	LN 195.0	0.311 J	76.8	4.06	2.24 U	8,930			mg/kg	0-2	2/3/04	Validated RHQ1-S001
0.62 U		175	40.9	2.48 U	374	0.272 J	1.24 U	907	16.7	0.561	237	9,220	163	32,500	89.3	9.51	26.5	23,700	0.117 J	0.403 J	67.5	5.81	2.48 U	11,500			mg/kg	8.5 - 9.5	2/3/04	RHQ1-S002 RHQ2-S001
0.73		121	25.3	1.11 J	325	0.572 U	1.14	1,430	255	0.109 J	375	28,400	113	19,500	27.1	14.7	55.5	64,600	0.572 U	0.412 J	89.1	5.38	2.29 U	10,600			mg/kg	0.2-2	2/4/04	
1.1		114	27.9	1.80 J	408	0.309JJ	1.13	861	907	0.207	541	63,200	224	29,900	53.1	38.4	110	29,200	0.564 U	0.497 J	82.1	9.77	0.805 J	10,100			mg/kg	1-2	2/3/04	RHQ3-S001
0.6 U		272	31.2	11.8 U	102 J	0.354 J	1.18	595 J	57.7	0.272	194	4,140	413	136,000	180	31.2	38.9 J	11,100	2.4 J	0.346 J	140	11.4	3.25	8,520			mg/kg	8 - 10	2/3/04	Validated RHQ3-S002 RHQ4-S001
0.56 U		64.8	19.1	1.68 J	846	0.253 J	1.14 U	799	694	0.0767 J	497	64,600	28.3	21,700	11.8	31.7	90.7	48,900	0.569 U	0.338 J	58	5.81	2.28 U	7,860			mg/kg	0.3 - 2	2/4/04	
1.1		145	30.6	2.24 B	596	0.271 J	1.16 U	1,240 J	801	0.433	552	64,400	226	30,900	42.1	37	130	20,500	0.578 U	0.498 J	108	1.1P	2.31 ∪	12,100			mg/kg	0.2 - 2	2/4/04	Validated RHQ5-S001
0.77 U		87.5	56.3	2.11 J	237	0.755 U	1.51 U	2,140	24.1	0.131 J	238	4,940	115	29,100	30.2	10.9	48.1	1,960	0.755 U	0.936	117	6.65	3.02 U	27,200			mg/kg	12.5 - 14	2/4/04	RHQ5-S002 RHQ6-S001
0.55 J		76.5	31.7	2.26 U	100 J	0.194 J	1.13	830	1,040	0.167	583	79,400	47	30,300	19.3	46.2	141	14,500	0.565 U	0.488 J	58.3	11.5	2.26 Ü	10,500			mg/kg	0.2 - 2	2/4/04	RHQ6-S001

Bold - Concentration exceeds Unrestricted Use URS
Shaded - Concentration exceeds Restricted Use URS

¹ - Delaware background concentration (DNREC, 2002)
nca- No criteria available
U - Compound not detected above laboratory detection limits
J - Concentration is estimated
B- Reported result is questionable value, blank contaminant
NA - Not analyzed

HSCA Soil Analytical Results - Inorganics Riverfront Headquarters RI Table 2

Bold - Concentration exceeds Unrestricted Use URS Shaded - Concentration exceeds Restricted Use URS

¹- Delaware background concentration (DNREC, 2002)
nca- No criteria available
U - Compound not detected above laboratory detection limits
J - Concentration is estimated
B- Reported result is questionable value, blank contaminant
NA - Not analyzed

HSCA Soil Analytical Results - Inorganics Riverfront Headquarters RI Table 2

3,900 3,62 7.69 7.69 1,690 27.8 9.98	PWY-GP9- GP-651N- 2/3/04 2/26/01 12/7/98 6-7 0-2 16' mg/kg mg/kg mg/kg 13,900 6,860 19,700 3.62 0.83 U 1.5 U 7.69 1.3 4.8 202 55.2 80.5 0.512 J 0.56 1.1 0.881 0.21 B 0.14 U 1,690 22,400 2,550
	6,860 0.2 0.83 0.2 0.2 0.21 0.83 0.21 0.21 0.21 0.21 0.21

Bold - Concentration exceeds Unrestricted Use URS
Shaded - Concentration exceeds Restricted Use URS

^t - Delaware background concentration (DNREC, 2002)
nca- No criteria available
U - Compound not detected above laboratory detection limits
J - Concentration is estimated
B- Reported result is questionable value, blank contaminant
NA - Not analyzed

HSCA Soil Analytical Results - Pesticides/PCBs and VOCs Riverfront Headquarters RI Table 3

Sample ID	DNREC URS for Non Critical Water Resource Area (12/99)	on Critical Water rea (12/99)	Validated RHQ1-S001	RHQ1-S002	RHQ2-S001	RHQ3-S001	Validated RHQ3-S002	RHQ4-S001	Validated RHQ5-S001	RHQ5-S002	RHQ6-S001
Sample Date			2/3/04	2/3/04	2/4/04	2/3/04	2/3/04	2/4/04	2/4/04	2/4/04	2/4/04
Sample Depth Units			0 - 2 µg/kg	8.5 - 9.5 µg/kg	0.2-2 μg/kg	1 - 2 µg/kg	8 - 10 µg/kg	0.3 - 2 µg/kg	0.2 - 2 μg/kg	12.5 - 14 µg/kg	0.2 - 2 µg/kg
	Unrestricted Use Restricted Use	Restricted Use									
TCL PESTICIDES/PCBS											
Alpha BHC	100	900	9.4 U	11 U	4.8 U	4.7 U	2.1 J	4.8 U	4.8 U	1.3	0.97 U
Alpha Chlordane	2,000	16,000	9.4 U	11 U	6.6 U	4.7 U	10 UJ	5.1 U	4.8 U	1.3 U	3.6 ∪
Endosulfan II	47,000	1,200,000	19 U	22 U	9.8 U	9.6 U	21 UJ	9.8 U	9.8 U	2.6 U	2.1 U
Endosulfan Sulfate	47,000	1,200,000	19 U	22 U	9.8 U	9.6 U	21 UJ	9.8 U	9.8 U	2.6 U	2 U
Gamma Chlordane	2,000	16,000	10 U	11 U	5.2 U	5.1 U	11 UJ	5.2 U	5.2 U	1.4 U	3.3 ∪
Heptachlor Epoxide	70	600	9.7 U	11 U	8 U	4.7 U	10 UJ	4.8 U	4.8 U	1.3 ∪	1.6 U
p,p-DDD	3,000	24,000	19 U	22 U	9.8 U	9.6 U	21 UJ	9.8 U	9.8	2.6 U	2 U
p,p-DDE	2,000	17,000	19 U	22 U	10 U	9.6 U	6.9 UJ	17 U	9.8 U	2.6 U	5.4 U
p,p-DDT	2,000	17,000	19 U	22 U	9.8 U	9.6 U	18 UJ	9.8 U	9.8 U	2.6 U	23 U
Toxaphene	600	5,000	590 U	420 U	190 U	880 U	400 UJ	190 U	190 U	51 U	38 U
PCB-1248	300	3,000	200 U	230 U	100 U	100 U	220 UJ	100 U	100 U	28 U	21 U
PCB-1254	300	3,000	190 J	340	350	380	210 UJ	270	520	26 U	130
PCB-1260	300	3,000	290	2,800	98 U	420	210 UJ	98 U	1100	26 U	240
All other Pesticides/PCBs were not detected	were not detected										
TCL VOCS											
Benzene	800	200,000	360 J	700 U	280 U	430 U	120 J	280 U	39 J	390 U	290 U
Ethylbenzene	400,000	5,000,000	360 J	700 U	280 U	100 J	300 U	280 U	270 U	390 U	290 U
Tetrachloroethene	11,000	110,000	360 J	700 U	100 J	430 U	300 U	100 J	270 U	390 U	290 U
Toluene	650,000	5,000,000	360 J	700 U	62 J	120 J	110 J	280 U	270 U	390 U	290 U
Xylene (Total)	420,000	5,000,000	360 J	700 U	280 U	140 J	130 J	280 U	270 U	390 U	290 U
All other VOCs were not detected	etected										

Bold - Concentration exceeds Unrestricted Use URS Shaded - Concentration exceeds Restricted Use URS
1- Delaware default background standard (December 1999)

nca- No criteria available
U - compound was not detected above laboratory detection limits
J - Concentration is estimated

HSCA Soil Analytical Results - Pesticides/PCBs and VOCs Riverfront Headquarters RI Table 3

Sample ID	DNREC URS for Non Critical Water Resource Area (12/99)	on Critical Water rea (12/99)	RHQ6-S002	Validated RHQ7-S001	RHQ7-S002	RHQ8-S001	Validated RHQ8-S002	RHQ9-S001	RHQ9-S002	RHQ10-S001	Validated RHQ10-S002
Sample Date			2/4/04	2/3/04	2/3/04	2/4/04	2/4/04	2/4/04	2/4/04	2/4/04	2/4/04
Sample Depth Units			4.2 - 6.7 µg/kg	0.2 - 2 µg/kg	6 - 7.5 µg/kg	0.2 - 2 µg/kg	5.4 - 6 µg/kg	0.3 - 2 μg/kg	9.4 - 11.4 µg/kg	0.4 - 2 µg/kg	4.8 - 6 μg/kg
	Unrestricted Use Restricted Use	Restricted Use					The second secon				
TCL PESTICIDES/PCBS											The second secon
Alpha BHC	100	900	4.9 U	0.97 U	1.1 U	9.3 U	5.1 U	4.8 U	5.9 U	4.7 U	0.98 U
Alpha Chlordane	2,000	16,000	4.9 U	0.97 U	1.1 U	9.3 U	5.1 U	4.8 U	5.9 U	4.7 U	0.98 U
Endosulfan II	47,000	1,200,000	10 U	2 U	2.3 ∪	19 U	5.5 J	9.8 U	12 U	9.7 U	2 U
Endosulfan Sulfate	47,000	1,200,000	5 J	2 U	2.3 U	19 U	3.8 J	9.8 U	7.4 J	9.7 U	0.56 J
Gamma Chlordane	2,000	16,000	5.3 U	1.1	1.2 U	10 U	5.5 U	5.2 U	6.4 U	5.1 U	1.1 U
Heptachlor Epoxide	70	600	4.9 U	0.97 U	0.42 J	9.3 U	5.1 U	4.8 U	5.9 U	4.7 U	0.98 U
p,p-DDD	3,000	24,000	7.8 J	2 U	2.3 ∪	19 U	10 U	9.8 U	12 U	9.7 U	2 U
p,p-DDE	2,000	17,000	12	2 U	2.3 U	37	10 U	10 U	12 U	9.7 U	2 U
p,p-DDT	2,000	17,000	4.1 J	2 U	2.5 U	34	10 U	9.8 U	12 U	9.7 U	2 U
Toxaphene	600	5,000	190 U	33 J	91	370 U	200 U	190 U	240 U	190 U	39 U
PCB-1248	300	3,000	110 U	21 U	24 U	200 U	110 U	100 U	130 U	100 U	21 U
PCB-1254	300	3,000	100 U	13 J	23 U	190 U	100 U	330	120 U	97 U	20 U
PCB-1260	300	3,000	100 U	12 J	23 U	190 U	100 U	340	120 U	97 U	20 U
All other Pesticides/PCBs were not detected	were not detected										
TCL VOCS											
Benzene	800	200,000	350 U	710 U	330 U	260 U	310 U	260 U	340 U	270 U	300 U
Ethylbenzene	400,000	5,000,000	350 U	710 U	330 U	260 U	310 U	260 U	340 U	270 U	300 U
Tetrachloroethene	11,000	110,000	350 U	710 U	330 U	260 U	310 U	68 J	340 U	270 U	300 U
Toluene	650,000	5,000,000	350 U	710 U	330 U	260 U	310 U	260 U	340 U	270 U	300 U
Xylene (Total)	420,000	5,000,000	350 U	710 U	330 U	260 U	310 U	260 U	340 U	270 U	300 U
All other VOCs were not detected	etected								*		

Bold - Concentration exceeds Unrestricted Use URS
Shaded - Concentration exceeds Restricted Use URS

1 - Delaware default background standard (December 1999)
nca- No criteria available
U - compound was not detected above laboratory detection limits
J - Concentration is estimated

3/2/04

HSCA Soil Analytical Results - Pesticides/PCBs and VOCs Riverfront Headquarters RI Table 3

Sample ID	DNREC URS for Non Critical Water Resource Area (12/99)	on Critical Water rea (12/99)	RHQ11-S001	RHQ11-S001 RHQ11-S002 RHQ12-S001	RHQ12-S001	RHQ12-S002	PWY-GP9- S001	GP-651N- S001	GP-653A- S001
Sample Date			2/4/04	2/4/04	2/3/04	2/3/04	2/26/01	12/7/98	12/7/98
Sample Depth Units			0.1 - 2 µg/kg	5.8 - 6.8 µg/kg	0.2 - 2 µg/kg	6 - 7 µg/kg	0-2 µg/kg	16' µg/kg	16' µg/kg
7	Unrestricted Use Restricted Use	Restricted Use							
TCL PESTICIDES/PCBS									
Alpha BHC	100	900	4.4 U	11 U	10	5.3 U	NA	NA A	NA
Alpha Chlordane	2,000	16,000	2.6 J	11 U	1 0	5.3 U	NA A	NA	N _A
Endosulfan II	47,000	1,200,000	9.1 U	22 U	2.1 U	11 U	NA A	NA A	N A
Endosulfan Sulfate	47,000	1,200,000	9.1 U	22 U	2.1 U	11 U	NA	NA	N _A
Gamma Chlordane	2,000	16,000	4.1 J	12 U	1.1 U	5.8 U	NA A	NA	N A
Heptachlor Epoxide	70	600	4.4 U	11 U	1 U	5.3 U	NA A	NA	N A
p,p-DDD	3,000	24,000	13	22 U	2.1 U	11 U	NA	NA	N _A
p,p-DDE	2,000	17,000	4.3 J	22 U	2.1 U	11 U	NA	NA	N _A
p,p-DDT	2,000	17,000	9.1 U	22 U	2.1 U	11 U	AN	NA	NA A
oxaphene	600	5,000	180 U	430 U	30 J	210 U	NA	NA	NA
PCB-1248	300	3,000	96 U	240 U	22 U	120 U	5,800	110 U	83 U
PCB-1254	300	3,000	91 U	220 U	21 U	110 U	9,000	110 U	83 U
PCB-1260	300	3,000	91 U	220 U	19 J	110 U	NA	110 U	83 U
All other Pesticides/PCBs were not detected	ere not detected								
TCL VOCS									
Benzene	800	200,000	280 U	330 U	390 U	330 U	110 U	260 U	130 U
Ethylbenzene	400,000	5,000,000	280 U	330 U	390 U	330 U	440 U	1000 U	540 U
[etrachloroethene	11,000	110,000	280 U	330 U	390 U	330 U	110 U	260 U	130 U
Coluene	650,000	5,000,000	280 U	330 U	390 U	330 U	550 U	1300 U	670 U
Xylene (Total) 4	420,000	5,000,000	280 U	330 U	390 U	330 U	550 U	1300 U	670 U

Bold - Concentration exceeds Unrestricted Use URS Shaded - Concentration exceeds Restricted Use URS '- Delaware default background standard (December 1999) nca- No criteria available U - compound was not detected above laboratory detection limits J - Concentration is estimated

HSCA Soil Analytical Results - SVOCs Riverfront Headquarters RI

Sample ID	DNREC URS for Non Critical Water Resource Area (12/99)	or Non Critical se Area (12/99)	Validated RHQ1-S001	RHQ1-S002	RHQ2-S001	RHQ3-S001	Validated RHQ3-S002	RHQ4-S001	Validated RHQ5-S001	RHQ5-S002	RHQ6-S001
Sample Date			2/3/04	2/3/04	2/4/04	2/3/04	2/3/04	2/4/04	2/4/04	2/4/04	2/4/04
Sample Depth			0-2	8.5 - 9.5	0.2-2	1-2	8 - 10	0.3 - 2	0.2 - 2	12.5 - 14	0.2 - 2
Units			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	μg/kg	µg/kg
	Unrestricted Use Restricted Use	Restricted Use									
TCL SVOCS		*									
1,2,4-Trichlorobenzene	78,000	2,000,000	380 U	420 U	390 U	380 U	410 U	380 U	390 U	520 U	390 U
1,4-Dichlorobenzene	27,000	240,000	380 U	420 U	390 U	380 U	410 U	380 U	390 U	520 U	390 U
2,4-Dimethylphenol	160,000	5,000,000	380 U	49 J	J 068	380 U	150 J	380 U	390 U	520 U	390 U
2-Methylnaphthalene	160,000	4,100,000	46 J	560	59 J	100 J	280 J	380 U	83 J	58 J	390 U
4-Methylphenol	39,000	5,000,000	380 U	420 U	390 U	380 U	410 U	380 U	390 U	520 U	390 U
Acenaphthene	470,000	5,000,000	61 J	1200	94 J	190 J	320 J	56 J	91 J	520 U	390 U
Acenaphthylene	nca	nca	J 66	200 J	79 J	190 J	190 J	380 U	160 J	52 J	390 U
Anthracene	1,000,000	5,000,000	160 J	2,300	280 J	370 J	480	100 J	270 J	240 J	82 J
Benzo(a)anthracene	900	8,000	480	2,800	560	1,300	1,000	260 J	880	650	320 J
Benzo(a)pyrene	90	800	450	2,000	460	1,200	800	240 J	850	490 J	340 J
Benzo(b)fluoranthene	900	8,000	660	2,600	570	1,600	1,100	310 J	1,200	580	410
Benzo(g,h,i)perylene	nca	nca	170 J	450	240 J	430	290 J	100 J	390	190 J	230 J
Benzo(k)fluoranthene	9,000	78,000	240 J	900	250 J	670	430	140 J	430	280 J	190 J
bis(2-Ethylhexyl)phthalate	46,000	410,000	380 U	420 U	390 U	380 U	410 U	380 U	390 U	520 U	390 U
Carbazole	32,000	290,000	64 J	960	92 J	170 J	170 J	45 J	100 J	520 U	390 U
Chrysene	87,000	780,000	570	2,500	600	1,300	1,000	290 J	940	590	340 J
Dibenz(a,h)anthracene	90	800	97 J	240 J	88 J	190 J	120 J	40 J	160 J	94 J	69 J
Dibenzofuran	31,000	820,000	63 J	1,000	74 J	140 J	270 J	380 U	95 J	53 J	390 U
Di-n-octylphthalate	160,000	4,100,000	380 U	420 U	390 U	380 U	410 U	380 U	390 U	520 U	390 U
Fluoranthene	310,000	5,000,000	930	5,400	1,300	2,200	2,100	540	1,700	1,000	580
Fluorene	310,000	5,000,000	72 J	1,500	r 06	190 J	490	46 J	130 J	120 J	390 U
Indeno(1,2,3-cd)pyrene	900	8,000	230 J	620	260 J	550	340 J	120 J	490	240 J	250 J
Naphthalene	160,000	4,100,000	59 J	680	L 09	220 J	160 J	380 U	110 J	76 J	390 U
Phenol	1,000,000	5,000,000	380 U	420 U	390 U	380 U	410 U	380 U	390 U	520 U	390 U
Phenanthrene	1,000,000	5,000,000	720	7,400	940	1,500	2,000	380 J	1,200	690	300 J
Pyrene	230,000	5,000,000	950	5,000	1,200	2,200	1,900	520	1,700	1,000	680
All other SVOCs were not detected	tected										
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Bold - Concentration exceeds Unrestricted Use URS
Shaded - Concentration exceeds Restricted Use URS
1 - Delaware default background standard (December 1999)
nca- No criteria available
U - compound was not detected above laboratory detection limits
J - Concentration is estimated

HSCA Soil Analytical Results - SVOCs Riverfront Headquarters RI Table 4

Sample ID	DNREC URS for Non Critical Water Resource Area (12/99)	or Non Critical Se Area (12/99)	RHQ6-S002	Validated RHQ7-S001	RHQ7-S002	RHQ8-S001	Validated RHQ8-S002	RHQ9-S001	RHQ9-S002	RHQ10-S001	Validated RHQ10-S002
Sample Date			2/4/04	2/3/04	2/3/04	2/4/04	2/4/04	2/4/04	2/4/04	2/4/04	2/4/04
Sample Depth			4.2 - 6.7	0.2 - 2	6-7.5	0.2 - 2	5.4 - 6	0.3 - 2	9.4 - 11.4	0.4 - 2	4.8 - 6
	Unrestricted Use Restricted Use	Restricted Use	6v.6r	Pared	6v.6rd	Pyred	Parka	Pyrky	Parka	Parka	pgrag
TCL SVOCS											
1,2,4-Trichlorobenzene	78,000	2,000,000	390 U	390 U	440 U	370 U	410 U	380 U	480 U	380 U	390 U
1,4-Dichlorobenzene	27,000	240,000	390 U	390 U	440 U	370 U	410 U	380 U	480 U	380 U	390 U
2,4-Dimethylphenol	160,000	5,000,000	J 068	390 U	440 U	370 U	410 U	380 U	480 U	380 U	390 U
2-Methylnaphthalene	160,000	4,100,000	210 J	390 U	440 U	370 U	44 J	45 J	240 J	380 U	390 U
4-Methylphenol	39,000	5,000,000	390 U	390 U	440 U	370 U	410 U	380 U	480 U	380 U	390 U
Acenaphthene	470,000	5,000,000	220 J	390 U	70 J	41 J	75 J	50 J	360 J	380 U	390 U
Acenaphthylene	nca	nca	160 J	390 U	440 U	370 U	64 J	51 J	200 J	380 U	390 U
Anthracene	1,000,000	5,000,000	730	390 U	84 J	85 J	200 J	120 J	1,000	380 U	49 J
Benzo(a)anthracene	900	8,000	1,800	390 U	330 J	210 J	840	380	3,300	73 J	220 J
Benzo(a)pyrene	90	800	1,700	390 U	300 J	200 J	1,100	350 J	3,600	88 J	240 J
Benzo(b)fluoranthene	900	8,000	2,100	390 U	370 J	250 J	1,500	460	3,900	92 J	260 J
Benzo(g,h,i)perylene	nca	nca	1,100	390 U	180 J	130 J	1,200	190 J	1,700	54 J	120 J
Benzo(k)fluoranthene	9,000	78,000	930	390 U	180 J	120 J	590	220 J	1,800	43 J	120 J
bis(2-Ethylhexyl)phthalate	46,000	410,000	390 U	390 U	440 U	370 U	410 U	380 U	480 U	380 U	390 U
Carbazole	32,000	290,000	150 J	390 U	440 U	41 J	84 J	47 J	100 J	380 U	390 U
Chrysene	87,000	780,000	2,000	390 U	340 J	230 J	910	490	3,100	J 66	220 J
Dibenz(a,h)anthracene	90	800	370 J	390 U	65 J	38 J	300 J	G9 J	650	380 U	390 U
Dibenzofuran	31,000	820,000	220 J	390 U	440 U	370 U	53 J	44 J	210 J	380 U	390 U
Di-n-octylphthalate	160,000	4,100,000	390 U	390 U	440 U	370 U	410 U	380 U	480 U	380 U	390 U
Fluoranthene	310,000	5,000,000	3,000	390 U	500	430	1,200	710	4,200	J 66	320 J
Fluorene	310,000	5,000,000	310 J	390 U	440 U	39 J	71 J	52 J	380 J	380 U	390 U
Indeno(1,2,3-cd)pyrene	900	8,000	1,100	390 U	200 J	140 J	1,200	250 J	2,200	49 J	140 J
Naphthalene	160,000	4,100,000	220 J	390 U	440 U	370 U	49 J	62 J	650	380 U	390 U
Phenol	1,000,000	5,000,000	390 U	390 U	440 U	370 U	410 U	380 U	480 U	380 U	390 U
Phenanthrene	1,000,000	5,000,000	2,600	390 U	320 J	380	750	540	2,100	62 J	230 J
Pyrene	230,000	5,000,000	3,500	390 U	500	440	1,200	810	4,300	120 J	400
All other SVOCs were not detected	tected										

Bold - Concentration exceeds Unrestricted Use URS
Shaded - Concentration exceeds Restricted Use URS

1 - Delaware default background standard (December 1999)
nca- No criteria available
U - compound was not detected above laboratory detection limits
J - Concentration is estimated

HSCA Soil Analytical Results - SVOCs Riverfront Headquarters RI Table 4

Sample ID	DNREC URS for Non Critical Water Resource Area (12/99)	or Non Critical ce Area (12/99)	RHQ11-S001	RHQ11-S001 RHQ11-S002	RHQ12-S001	RHQ12-S002	PWY-GP9- S001	GP-651N- S001	GP-653A- S001
Sample Date			2/4/04	2/4/04	2/3/04	2/3/04	2/26/01	12/7/98	12/7/98
Sample Depth			0.1 - 2	5.8 - 6.8	0.2 - 2	6 - 7	0-2	16'	16'
Units	Unrestricted Use Restricted Use	Restricted Use	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
TCL SVOCS									
1,2,4-Trichlorobenzene	78,000	2,000,000	3,600 ∪	440 U	420 U	430 U	67	57 U	41 U
1,4-Dichlorobenzene	27,000	240,000	3,600 U	440 U	420 U	430 U	7.5 J	570 U	410 U
2,4-Dimethylphenol	160,000	5,000,000	3,600 U	440 U	420 U	430 U	350 U	570 U	410 U
2-Methylnaphthalene	160,000	4,100,000	3,600 ∪	J 99	420 U	400 J	27 J	570 U	410 U
4-Methylphenol	39,000	5,000,000	3,600 U	440 U	420 U	110 J	350 U	570 U	410 U
Acenaphthene	470,000	5,000,000	3,600 U	440 U	420 U	420 J	350 U	570 U	410 U
Acenaphthylene	nca	nca	3,600 U	440 U	420 U	420 J	76 J	570 U	410 U
Anthracene	1,000,000	5,000,000	3,600 U	440 U	420 U	960	26 J	570 U	410 U
Benzo(a)anthracene	900	8,000	3,600 U	110 J	420 U	2,100	84	57 U	41 U
Benzo(a)pyrene	90	. 800	3,600 U	87 J	420 U	2,000	130	57 U	41 U
Benzo(b)fluoranthene	900	8,000	3,600 U	130 J	420 U	2,500	260	57 U	41 U
Benzo(g,h,i)perylene	nca	nca	3,600 U	53 J	420 U	960	66 J	570 U	410 U
Benzo(k)fluoranthene	9,000	78,000	3,600 U	62 J	420 U	1,200	63	57 U	41 U
bis(2-Ethylhexyl)phthalate	46,000	410,000	2,500 J	470	420 U	430 U	350 U	570 U	410 U
Carbazole	32,000	290,000	3,600 U	440 U	420 U	320 J	9.2 J	570 U	410 U
Chrysene	87,000	780,000	3,600 ∪	170 J	420 U	2,200	100 J	570 U	410 U
Dibenz(a,h)anthracene	90	800	3,600 U	440 U	420 U	350 J	35 U	57 U	41 U
Dibenzofuran	31,000	820,000	3,600 ∪	440 U	420 U	540	7.4 J	570 U	410 U
Di-n-octylphthalate	160,000	4,100,000	3,600 ∪	500	420 U	430 U	350 U	570 U	410 U
Fluoranthene	310,000	5,000,000	3,600 ∪	170 J	420 U	4,100	130 J	570 U	410 U
Fluorene	310,000	5,000,000	3,600 ∪	440 U	420 U	900	14 J	570 U	410 U
Indeno(1,2,3-cd)pyrene	900	8,000	3,600 U	52 J	420 U	1,200	95	57 U	41 U
Naphthalene	160,000	4,100,000	3,600 ∪	44 J	420 U	290 J	57 J	570 U	410 U
Phenol	1,000,000	5,000,000	3,600 ∪	440 U	420 U	430 U	350 U	62 J	56 J
Phenanthrene	1,000,000	5,000,000	3,600 ∪	280 J	420 U	4,500	L 88	570 U	410 U
Pyrene	230,000	5,000,000	3,600 U	150 J	420 U	4,400	230 J	570 U	410 U
All other SVOCs were not detected	etected								

Bold - Concentration exceeds Unrestricted Use URS
Shaded - Concentration exceeds Restricted Use URS
- Delaware default background standard (December 1999)
nca- No criteria available
U - compound was not detected above laboratory detection limits
J - Concentration is estimated

Table 5 HSCA Groundwater Analytical Results - Inorganics Riverfront Headquarters RI

Sample ID Sample Date Screen set at (ft - ft) Units	URS for Protection of Human-Health in Groundwater (12/99)	RHQ1-W00 2/3/04 8-18 µg/l	01	RHQ3-W001 2/3/04 5-15 µg/l	RHQ7-W001 2/3/04 6-16 μg/l	RHQ12-W001 2/3/04 4-14 µg/l
Metals						
Aluminum	200	840		41.3 U	41.3 U	41.3 U
Antimony	6	8.5	U	8.5 U	8.5 U	8.5 U
Arsenic	50	4.9	U	4.9 U	4.9 U	4.9 U
Barium	260	238		271	910	421
Beryllium	4	0.34		0.34 U	0.34 U	0.34 U
Cadmium	5	0.87	U	0.87 U	0.87 U	0.87 U
Calcium	nca	90,800		123,000	123,000	33,100
Chromium	100	2.2	U	2.2 U	2.2 U	2.2 U
Cobalt	220		U	1.6 U	1.6 U	1.6 U
Copper	1,300	2.1	U	2.1 U	2.1 U	2.1 U
Iron	300	3,700		2,620	19,300	8,250
Lead	15	9.3	J	9.3 U	9.3 U	9.3 U
Magnesium	nca	24,800		71,500	24,500	6,410
Manganese	50	212		323	257	48
Mercury	2	0.16	J	0.16 U	0.16 U	0.16 U
Nickel	100	3.8	J	3.8 U	3.8 U	3.8 U
Potassium	nca	25,500	J	16,200 J	19,600 J	15,600 J
Selenium	50	4.7	U	4.7 U	5.2 J	4.7 U
Silver	100	1.8	U	1.8 U	1.8 U	1.8 U
Sodium	nca	472,000		49,000	72,400	212,000
Thallium	2	8.9	U	8.9 U	8.9 U	8.9 U
Vanadium	26	1.7	U	1.7 U	1.7 U	1.7 U
Zinc	2,000	6.1	J	4.1 U	4.2 J	4.1 U
Wet Chemistry						
Chloride	nca	733,000		168,000	157,000	159,000
Total Cyanide	200	10		7.3 J	12	44

Bold - Concentration exceeds URS

nca- No criteria available

U - Compound was not detected above laboratory detection limits

J - Concentration is estimated

All groundwater data was validated

Table 6 HSCA Groundwater Analytical Results - Organics Riverfront Headquarters RI

Sample ID Sample Date Screen set at (ft - ft)	URS for Protection of Human-Health in Groundwater (12/99)	RHQ1-W001 2/3/04	RHQ3-W001 2/3/04	RHQ7-W001 2/3/04	RHQ12-W001 2/3/04
Units	自己是在对原生的系统和是主义	µg/l	µg/l	µg/l	μg/l
Pesticides/PCBs					
Heptachlor Epoxide	0.2	0.013 J	0.002 U	0.0019 U	0.0019 U
PCB-1260	0.03	15	0.3 U	0.29 U	0.29 U
All other pesticides/PCBs we	e not detected above lab	oratory detection	limits		
SVOCs					
Acenaphthene	37	1 U	3 J	1 J	1 U
Dibenzofuran	2	1 U	2 J	1 U	1 U
Fluoranthene	150	1 U	1 J	1 U	1 U
Fluorene	24	1 U	3 J	1 U	1 U
Naphthalene	20	1 U	4 J	1 U	1 U
Phenanthrene	120	1 U	3 J	1 U	1 U
All other SVOCs were not de	ected above laboratory de	etection limits		•	
vocs					
2-Butanone	nca	3 U	3 U	3 U	3 J
Benzene	5	0.5 U	0.5 J	0.5 U	0.5 U
Xylene (Total)	1,200	0.8 U	0.8 J	0.8 U	0.8 U
All other VOCs were not dete	cted above laboratory det	ection limits			
Dold Consentration average					

Bold - Concentration exceeds URS

nca- No criteria available

U - Compound was not detected above laboratory detection limits

J - Concentration is estimated